APPENDIX 5-21

REVISED WAVE RUN-UP MODEL FILES
ELECTRONIC FILES ON DVD SUBMITTED JANUARY, 2006

Wave run-up modeling was conducted for the design conditions and was presented in Appendix 5-17, Evaluation of Wave Run-up Based on DCM-2. Three additional cases were developed to examine the cost implications of modifying the design conditions (Section 21). The results of the three additional cases are summarized below. The program file containing these three cases is titled VEcases.ace.

Two modifications from case 1 were modeled. Case 1 included the 100-year wind in combination with the Probable Maximum Precipitation (PMP). Cases 1a and 1b included the 100-year wind in combination with a 500-year rainfall event and the regional PMP, respectively. No modifications were made to case 2 defined as a category five hurricane in combination with a 100-year rainfall. Case 3 was defined as the probable maximum wind (PMW). Case 3 was modified to represent a 500-year wind. The specific values used for rainfall, wind, and wind set-up are included on Table 1.

Table 1 Wave Run-up Results for Modified Design Conditions

Case	Wind Speed (mph)	Rainfall Depth (feet)	Effective Depth (feet)	Wave Run-up (feet)	Wind Setup (feet)	Maximum Water Level (ft)	
						Regular Wave	Irregular Wave
Case 1 - PMP, 100 yr wind	103	4.5	16.5	6.0	2.1	24.6	25.5
Case 1a – 500-year rain, 100-year wind	103	1.7	13.7	5.45	2.45	21.6	22.5
Case 1b - Regional PMP, 100-year wind	103	3.5	15.5	5.8	2.2	23.5	24.5
Case 2 - 100 year rain, category five wind	122	1.4	13.4	6.1	3.6	23.1	24.0
Case 3 - PMW, no rain	158	0.0	12.0	6.7	7.0	25.7	27.5
Case 3a – 500-year wind, no rain	119	0.0	12.0	5.6	3.8	21.4	22.5

Notes:
1. Maximum Water Level (MWL) is measured from the reservoir bottom (original ground level)
2. Effective Depth is the sum of normal maximum operating level (12 feet) plus rainfall and is the depth used to calculate wind set-up
3. MWL for the regular (monochromatic) wave is the sum of effective depth, wave run-up and wind set-up
4. MWL for the irregular wave is the depth above bottom at which overtopping is less than 0.1 cfs/foot, defined as zero overtopping in DCM-2.